Favorable consideration and allowance of the claims of the present application are respectfully requested.

At the outset, and before addressing the Examiner's substantive rejections in the present Office Action, Applicants take this opportunity to amend the specification to correct minor informalities in paragraphs [0073] and [0077] of the present specification. Additionally, Applicants take this opportunity to amend drawing FIG. 11 to add a reference number 130 as originally described in the specification at paragraph [0077]. Respectfully, no new matter is being added.

In the present Official Action, the Examiner rejected Claims 1-2, 4-5 and 7-9 under 35 U.S.C. §102(b) as allegedly anticipated by Panusopone et al. (US 6,647,061) (hereinafter "Panusopone"). Further, Claims 3 and 6 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Panusopone in view of Au et al. (US 6,842,483) (hereinafter "Au"). The Examiner did object to Claims 10-12 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to the rejection of Claims 1-2, 4-5 and 7-9 under 35 U.S.C. §102(b), applicants respectfully disagree in view of the amendments provided herein.

Particularly, applicant have canceled independent Claim 1 and Claim 4 and added a new independent Claim 13 that is a clearer and more exact statement of the invention. That is the present invention is directed to a method for transcoding an input compressed signal stream to an output compressed signal stream by <u>performing adaptive frame rate transcoding</u>

for a sub-GOP (Group of Pictures), the sub-GOP comprising one or more types of frames of the input compressed signal stream to be transcoded.

Respectfully, no new matter is being entered in this new Claim 13, as the crux of the invention is directed to the adaptive rate transcoding concept as described in the specification, e.g., at paragraph [0065] et seq. of the originally filed specification. Claim 13 further sets forth the concept of the sub-GOP unit for which the adaptive rate control for transcoding input video stream is applied, e.g., see paragraphs [0071] and [0072] of the originally filed specification. Originally filed Claims 5 and 7 have been amended to depend upon new Claim 13 and to correct a minor informality in Claim 7.

The Panusopone and Au reference, whether taken individually, or in combination, do not teach or suggest adaptive frame rate transcoding that is the output compressed stream comprising varying frame rate. While Panusopone teaches a technique for transcoding MPEG-2 to an MPEG-4 video streams, it does not teach nor suggest the concept of adaptive frame rate control. That is, while Panusopone teaches a transcoding technique for minimizing complexity with smallest possible error, it achieves this by either disabling all B frames (See Panusopone'a Abstract and specification at Col. 18, lines 54 to 62) or enabling all of the B frames of the input stream. While the Examiner has cited the Au reference, Au is directed to an encoding scheme, for encoding a video stream in the first instance, and does not relate at all to transcoding a compressed video stream into another compressed video stream which the present invention is directed to. That is, the Examiner has cited paragraphs in Au that teaches how to select motion vectors for pixel blocks. Au does not relate to the present new Claims 13 – 17 which are directed to transcoding some types of compressed frames while skipping

others. Thus, Au is of no help to Panusopone and the combination neither teaches nor suggests the present invention as claimed in new Claim 13.

New Claim 14 further limits new independent Claim 13 by setting forth an additional step of implementing a rate distortion optimization within said sub-GOP to adjust the output frame rate of the compressed output signal stream. No new matter is being added as the rate distortion optimization is clearly described in the specification, e.g., [0065]-[0068] of the originally filed specification.

New Claim 15 further limits new independent Claim 13 by setting forth a step for defining a frame set S that indicates certain frames to be either skipped or transcoded, said set $S = [S_1, S_2, \ldots S_N]$, $S_i \in [0,1]$, $i = 1, \ldots N$, with 0 denoting a frame to be skipped and 1 denoting a frame to be transcoded and N denoting a total number of frames in said sub-GOP. This frame set S thus provides a mechanism for performing the adaptive frame rate transcoding by determining a status (skip or transcode) of each frame in the sub-GOP based on its corresponding value in set S.
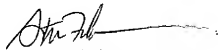
As a consequence of determining which frames either to be skipped or coded within the sub-GOP, a total distortion of the compressed output signal stream may be minimized and this is the subject matter of New Claim 16.

Thus, besides not providing output frame adaptive rate control for transcoding compressed video streams in the first instance, the combination of Panasupone in view of Au does not teach the rate distortion optimization feature as set forth in the new claims.

Thus, respectfully, the Examiner is respectfully requested to enter and consider the new Claims 13-16, and, in light of the distinctions described in the above remarks, to allow these claims to proceed to issuance, which action is respectfully solicited.

In view of the foregoing, this application is now believed to be in condition for allowance, and a Notice of Allowance is respectfully requested. If the Examiner believes a telephone conference might expedite prosecution of this case, it is respectfully requested that he call applicant's attorney at (516) 742-4343.

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Respectfully submitted,

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